

AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein the thickness of a trunk portion of the external can is made thinner than 0.18 mm, and the thickness of the sealing edge portion of the external can is made 1.4 times greater than the thickness of the trunk portion, and-

wherein said cathode is made of a mixture of manganese dioxide and graphite.

2. (WITHDRAWN) An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein along all the outer circumferential portion of the metal plate, as a portion for sandwiching the resin sealing member together with the external can, a curved portion, which has an average curvature radius of not more than 1 mm in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof, is installed.

3. (WITHDRAWN) An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein along all the outer circumferential portion of the metal plate, as a portion for sandwiching the resin sealing member together with the external can, a curved portion,

which has an average curvature radius of not more than 1 mm in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof and which is formed in a curved manner over an angle range greater than 90 degrees, is installed.

4. (WITHDRAWN) The alkaline dry cell according to claim 2 or claim 3, wherein the curved portion is maintained in contact with the resin sealing member within an angle range greater than 90 degrees in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof.


5. (WITHDRAWN) An alkaline dry cell comprising:
a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein the metal plate comprises a terminal face having a protruding shape placed in the center and a circumferential flange face formed in a manner surrounding the terminal

face when viewed in a direction vertically penetrating the terminal face, and a flat portion is formed on the inner circumferential side of the flange face, the flange face flat portion and the terminal face being set so as not to be in parallel with each other.




6. (WITHDRAWN) The alkaline dry cell according to claim 5, wherein the angle made by the terminal face of the metal plate and the flat portion of the flange face is set to not less than 4 degrees.

7. (WITHDRAWN) The alkaline dry cell according to claim 6, wherein along all the outer circumferential portion of the metal plate, as a portion for sandwiching the resin sealing member together with the external can, a curved portion, which has an average curvature radius of not more than 1 mm in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof, is installed.

8. (WITHDRAWN) An alkaline dry cell comprising:
a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,




wherein the resin sealing member comprises a boss section holding an anode collector rod to be inserted to the center portion of the anode, an outer circumferential portion which is supported by the supporting member with the inner circumferential side so as to contact the inner circumferential face of the external can, and a connecting portion for connecting the boss section and the outer circumferential portion,

wherein an anti-explosion thin portion is installed on the foot portion on the boss section side in the connecting portion of the resin sealing member, and a stress absorbing portion, which absorbs one portion of the stress exerting on the connecting section so as not to allow the stress to concentrate on the anti-explosion thin portion when the resin sealing member is tightened to seal the opening edge of the external can, is placed on the foot portion on the outer circumferential portion side,

wherein said stress absorbing portion is formed in such a manner that its thickness becomes thinner discontinuously as compared with a portion positioned right inner circumferential side thereof, with a step difference placed between it and the portion positioned right inner circumferential side thereof.

9. (WITHDRAWN) An alkaline dry cell comprising:



a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member, the resin sealing member comprises a boss section holding an anode collector rod to be inserted to the center portion of the anode, an outer circumferential portion which is supported by the supporting member with the inner circumferential side so as to contact the inner circumferential face of the external can, and a connecting portion for connecting the boss section and the outer circumferential portion, and

wherein an anti-explosion thin portion is installed on the foot portion on the boss section side in the connecting portion of the resin sealing member, said thin portion being formed in such a manner that its thickness becomes thinner discontinuously as compared with a portion positioned right outer circumferential side thereof in a manner so as to surround the thin portion, with a step difference being placed between it and the portion positioned outside thereof.

10. (WITHDRAWN) An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein the resin sealing member comprises a boss section holding an anode collector rod to be inserted to the center portion of the anode, an outer circumferential portion which is supported by the supporting member with the inner circumferential side so as to contact the inner circumferential face of the external can, and a connecting portion for connecting the boss section and the outer circumferential portion,

wherein an anti-explosion thin portion is installed on the foot portion on the boss section side in the connecting portion of the resin sealing member in a manner so as to have a thickness that becomes discontinuously thinner as compared with a first thickness portion located right outside this in a manner so as to surround the thin portion with a step difference from the first thickness portion, and a stress absorbing portion, which absorbs one portion of the stress exerting on the connecting section so as not to allow the stress to

concentrate on the anti-explosion thin portion when the resin sealing member is tightened to seal the opening edge of the external can, is placed on the foot portion on the outer circumferential portion side in the connecting portion,

wherein said stress absorbing portion is formed in such a manner that its thickness becomes thinner discontinuously as compared with a second thickness portion positioned right inner circumferential side thereof, with a step difference being placed between it and the second thickness portion,

wherein said connecting portion has a portion reaching to the second thickness portion from the first thickness portion, which becomes continuously thicker from the first thickness portion toward the second thickness portion.

11. (WITHDRAWN) The alkaline dry cell according to claim 20, wherein the thickness of the first thickness portion is set to ranging from 0.4 mm to 0.5 mm, and the second thickness portion is set to ranging from 2.5 times to 3.0 times greater than the first thickness portion.

12. (NEW) An alkaline dry cell comprising:
a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting

said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein the thickness of a trunk portion of the external can is made thinner than 0.18 mm, and the thickness of the sealing edge portion of the external can is made 1.4 times greater than the thickness of the trunk portion,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein along all the outer circumferential portion of the metal plate, as a portion for sandwiching the resin sealing member together with the external can, a curved portion, which has an average curvature radius of not more than 1 mm in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof, is installed.

13. (NEW) An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein the thickness of a trunk portion of the external can is made thinner than 0.18 mm, and the thickness of the sealing edge portion of the external can is made 1.4 times greater than the thickness of the trunk portion,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein along all the outer circumferential portion of the metal plate, as a portion for sandwiching the resin sealing member together with the external can, a curved portion, which has an average curvature radius of not more than 1 mm in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof and which is formed in a curved manner over an angle range greater than 90 degrees, is installed.

14. (NEW) The alkaline dry cell according to claim 12 or claim 13, wherein the curved portion is maintained in contact with the resin sealing member within an angle range greater than 90 degrees in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof.

15. (NEW) An alkaline dry cell comprising:
a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical

shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,


wherein the thickness of a trunk portion of the external can is made thinner than 0.18 mm, and the thickness of the sealing edge portion of the external can is made 1.4 times greater than the thickness of the trunk portion,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member, and

wherein the metal plate comprises a terminal face having a protruding shape placed in the center and a circumferential flange face formed in a manner surrounding the terminal face when viewed in a direction vertically penetrating the terminal face, and a flat portion is formed on the inner circumferential side of the flange face, the flange face flat portion and the terminal face being set so as not to be in parallel with each other.

16. (NEW) The alkaline dry cell according to claim 15, wherein the angle made by the terminal face of the metal plate and the flat portion of the flange face is set to not less than 4 degrees.

17. (NEW) The alkaline dry cell according to claim 16, wherein along all the outer circumferential portion of the metal plate, as a portion for sandwiching the resin sealing member together with the external can, a curved portion, which has an average curvature radius of not more than 1 mm in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof, is installed.



18. (NEW) An alkaline dry cell comprising:
a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,


wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein the thickness of a trunk portion of the external can is made thinner than 0.18 mm, and the thickness of the sealing edge portion of the external can is made 1.4 times greater than the thickness of the trunk portion,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein the resin sealing member comprises a boss section holding an anode collector rod to be inserted to the center portion of the anode, an outer circumferential

portion which is supported by the supporting member with the inner circumferential side so as to contact the inner circumferential face of the external can, and a connecting portion for connecting the boss section and the outer circumferential portion,



wherein an anti-explosion thin portion is installed on the foot portion on the boss section side in the connecting portion of the resin sealing member, and a stress absorbing portion, which absorbs one portion of the stress exerting on the connecting section so as not to allow the stress to concentrate on the anti-explosion thin portion when the resin sealing member is tightened to seal the opening edge of the external can, is placed on the foot portion on the outer circumferential portion side,


wherein said stress absorbing portion is formed in such a manner that its thickness becomes thinner discontinuously as compared with a portion positioned right inner circumferential side thereof, with a step difference placed between it and the portion positioned right inner circumferential side thereof.

19. (NEW) An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein the thickness of a trunk portion of the external can is made thinner than 0.18 mm, and the thickness of the sealing edge portion of the external can is made 1.4 times greater than the thickness of the trunk portion,



wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member, the resin sealing member comprises a boss section holding an anode collector rod to be inserted to the center portion of the anode, an outer circumferential portion which is supported by the supporting member with the inner circumferential side so as to contact the inner circumferential face of the external can, and a connecting portion for connecting the boss section and the outer circumferential portion, and

wherein an anti-explosion thin portion is installed on the foot portion on the boss section side in the connecting portion of the resin sealing member, said thin portion being formed in such a manner that its thickness becomes thinner discontinuously as compared with a portion positioned right outer circumferential side thereof in a manner so as to surround the thin portion, with a step difference being placed between it and the portion positioned outside thereof.

20. (NEW) An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein the thickness of a trunk portion of the external can is made thinner than 0.18 mm, and the thickness of the sealing edge portion of the external can is made 1.4 times greater than the thickness of the trunk portion,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein the resin sealing member comprises a boss section holding an anode collector rod to be inserted to the center portion of the anode, an outer circumferential portion which is supported by the supporting member with the inner circumferential side so as to contact the inner circumferential face of the external can, and a connecting portion for connecting the boss section and the outer circumferential portion,

wherein an anti-explosion thin portion is installed on the foot portion on the boss section side in the connecting portion of the resin sealing member in a manner so as to have a thickness that becomes discontinuously thinner as compared with a first thickness

portion located right outside this in a manner so as to surround the thin portion with a step difference from the first thickness portion, and a stress absorbing portion, which absorbs one portion of the stress exerting on the connecting section so as not to allow the stress to concentrate on the anti-explosion thin portion when the resin sealing member is tightened to seal the opening edge of the external can, is placed on the foot portion on the outer circumferential portion side in the connecting portion,

wherein said stress absorbing portion is formed in such a manner that its thickness becomes thinner discontinuously as compared with a second thickness portion positioned right inner circumferential side thereof, with a step difference being placed between it and the second thickness portion,

wherein said connecting portion has a portion reaching to the second thickness portion from the first thickness portion, which becomes continuously thicker from the first thickness portion toward the second thickness portion.

21. (NEW) The alkaline dry cell according to claim 20, wherein the thickness of the first thickness portion is set to ranging from 0.4 mm to 0.5 mm, and the second thickness portion is set to ranging from 2.5 times to 3.0 times greater than the first thickness portion.

AMENDMENTS TO THE DRAWINGS

Attached hereto are two (2) sheets of corrected formal drawings that comply with the provisions of 37 C.F.R. § 1.84. The corrected formal drawings incorporate the following drawing changes:

**Figures 15 to 17 have been amended to include the legend
“BACKGROUND ART”**

It is respectfully requested that the corrected formal drawings be approved and made a part of the record of the above-identified application.